Climate Variability and Predictability (CVP)

CLIVAR (Climate Variability and Predictability) is an international, interdisciplinary research effort within the World Climate Research Programme (WCRP) focusing on the variability and predictability of the slowly varying components of the climate system. CLIVAR investigates the physical and dynamical processes in the climate system occurring on seasonal, interannual, decadal and centennial time-scales. U.S. CLIVAR focuses on these phenomena as they affect the United States.

The U.S. CLIVAR goals include:

- Identifying and understanding the major patterns of climate variability on seasonal, decadal and longer time scales and evaluating their predictability;
- Expanding our capacity in short term (seasonal to interannual) climate predictability and searching for ways to predict decadal variability;
- Better documenting the record of rapid climate changes and the mechanisms for these events, and evaluating the potential for abrupt climate changes in the future;
- Evaluating and enhancing the models used to project climate change due to human activity, including anthropogenically induced changes in atmospheric composition; and
- Detecting and describing any global climate changes that may occur.

Recent research findings have confirmed that significant variations in climate over the past several decades as well as the occurrence of extreme events such as hurricanes and droughts are, in part, due to changes in ocean conditions (e.g. regional SST). This suggests and motivates a focus on further quantifying and elucidating the observed changes of the coupled climate system (especially the

ocean component) so that we can better describe these changes, the extent to which they are coupled, and how well our models are depicting and predicting them. Moreover, the attribution, or causes, of the important climate features and anomalies mentioned previously should be more thoroughly investigated. Developing predictive understanding of decadal variability with the ultimate aim of prediction is still a long-range goal of the CVP program. Although experimental predictions are perhaps a few years away, continued investment into studies that look at the mechanisms that govern decadal variability is warranted. Lastly, tropical biases in prediction models are still a vexing issue. Slow and steady investment devoted towards multi-model approaches would provide a basis for continued improvement.

In support of U.S. CLIVAR in FY2007, NOAA CVP encourages proposals in the following areas:

- Activities that exploit the ocean observing system to elucidate the state and variability (including long-term changes) of the coupled climate system. Proposed activities may focus on developing new gridded or synthesized products and their use in diagnostic and prediction studies.
- Studies to attribute observed climate variability to specific components of the climate system.
- Studies of mechanisms that govern decadal variability (including the decadal variability of ENSO) of the coupled climate system and its predictability.
- Multiple-model studies that address tropical biases in models used for predictions and projections.

For further information, investigators may contact the NOAA program manager, James Todd (James.Todd@noaa.gov, voice: 301-427-2383, fax: 301-427-2073).